Amendments to the Drawings:

The attached sheets of drawings includes changes to drawing FIGs. 1-4 and replace the original sheets. Drawing figures 1, 3 and 4 have been amended to be designated by the legend of "Conventional Art." Drawing figure 2 has been amended to be designated by the legend of "Related Art."

Attachment: Replacement Sheet

Annotated Sheet Showing Changes

REMARKS

I.   Status of Claims

After the above amendments, claims 1-21 are pending. Claims 1 and 18 are independent. The above claim amendments have been made to clarify the language used in the claims.

II.   Response to Drawing Objections

In response to the Examiner's objection to the drawings the Applicants have amended drawings figures 1-4. Specifically, drawing figures 1, 3 and 4 as amended are designated by the legend of "Conventional Art." Drawing figure 2 as amended is designated by the legend of "Related Art." Accordingly, Applicants respectfully request withdrawal of the objection to the drawings.

III.   Response to Claim Objections

In response to the Examiner's objection to the claims, the Applicants have amended claims 1, 5 and 11 per the Examiner's suggestion. Accordingly, Applicants respectfully request withdrawal of the objection to the drawings.

IV.   Response to Rejections under 35 U.S.C. §112

In response to the Examiner's rejections of the claims under 35 U.S.C. §112, second paragraph, the Applicants have amended claims 1, 2-4, 6-8 and 21 based on the Examiner's comments. Accordingly, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. §112, second paragraph.

V.   Response to Rejections under 35 U.S.C. §103(a)

The Examiner has rejected claims 1-21 under 35 U.S.C. 103(a) as being unpatentable over SEIDEL et al. (US 6,658,005 B2) in view of DECKER (US 5,946,320 A). Applicants respectfully request reconsideration of the rejections because SEIDEL et al. and DECKER, neither alone nor in combination, neither explicitly nor implicitly, discloses, anticipates, suggests, teaches or renders obvious all of the features of the claims. In particular, starting with independent claim 1, the claim as amended recites:

An apparatus for use in a mobile communication system
that simultaneously transmits a control message over a control
channel and data over a data channel, wherein the apparatus
supports hybrid automatic repeat request (HARQ), the apparatus
comprising:

a physical layer for receiving the control message and the
data from the control channel and the data channel respectively and
for decoding the received control message and data;

a physical layer's HARQ controller for processing a result
of the decoding of at least one of the received control message and
data and for controlling the physical layer according to a result of
the processing.

The Examiner cited column 2 lines 26-28 and column 7 lines 62-65 of SEIDEL et al. as disclosing a physical layer for 1) receiving the control message and the data from the control channel and the data channel respectively and for 2) decoding the received control message and data. Column 2 lines 26-28 of SEIDEL et al. indicates that SEIDEL et al.'s invention overcomes the problems of the prior art since a sequence number is transmitted over a separate control channel. Column 7 lines 62-65 of SEIDEL et al. indicates that if incremental redundancy is used different logical channels are passed as separate transport channels to the physical layer. Based upon the cited portions of SEIDEL et al., it is not seen how SEIDEL et al. could render obvious "a physical layer for receiving the control message and the data from the control channel and the data channel respectively and for decoding the received control message and data", as recited in claim 1. More specifically, the cited portions of SEIDEL et al. and surrounding text are discussing aspects of SEIDEL et al. relate to transmission and not reception. For example, column 2 lines 26-28 includes the word "transmitted." Further, column 7 line 50 clearly identifies passing something to the physical layer for "transmission." Still further, while SEIDEL et al. makes reference to the term "physical layer," SEIDEL et al. in no way teaches or suggests that the physical layer either receives or decodes a control message and data. Upon review to the remaining disclosure of SEIDEL et al., SEIDEL et al. at best discloses the reception and decoding of a control message and data. However, SEIDEL et al. neither

implicitly nor explicitly discloses a physical layer for the reception and decoding of a control message and data. Therefore, SEIDEL et al. fails to teach "a physical layer for receiving the control message and the data from the control channel and the data channel respectively and for decoding the received control message and data." Should the Examiner maintain the rejection the Examiner is respectfully requested to articulate in detail how SEIDEL et al. is being interpreted to teach each and every portion of "a physical layer for receiving *the control message and the data from the control channel and the data channel respectively* and for decoding *the received control message and data*."

The Examiner cited drawing FIG. 4 and column 4 lines 15-27 of DECKER as disclosing a physical layer's HARQ controller for A) processing a result of the decoding of at least one of the received control message and data and B) for controlling the physical layer according to a result of the processing. FIG. 4 and column 4 lines 15-27 of DECKER disclose a receiver that repunctures a received layer 1 frame using the same puncturing matrix as in a transmitter side. DECKER further discloses that the repuncturing is possible without decoding parts of the received layer 1 frame due to the alternating use of predefined puncturing matrixes. Still further, DECKER discloses that Bits which are known not to be transmitted are assigned to a random value and that when layer 1 frames are received they are added to the receiver buffer. Even further, DECKER discloses that for the case that the receiver side uses soft decision decoding within the convolutional decoding algorithm, the receiver side has to store soft decision values between succeeding receptions and that the soft decision values used in this decision are also known as Log-Likelihood values. Based upon the cited portions of DECKER, it is not seen how DECKER could render obvious "a physical layer's HARQ controller for processing a result of the decoding of at least one of the received control message and data and for controlling the physical layer according to a result of the processing." Nothing in the cited portion or remaining portions of DECKER teaches or suggests a physical layer's HARQ controller. Further, nothing in the cited portion or remaining portions of DECKER teaches or suggests a physical layer's HARQ controller for controlling the physical layer according to a result of a processing. Therefore, DECKER fails to teach "a physical layer's HARQ controller for processing a result of the decoding of at least one of the received control message and data and for controlling the physical layer according to a result of the processing." Should the Examiner maintain the

rejection the Examiner is respectfully requested to articulate in detail how DECKER is being interpreted to teach each and every portion of "a physical layer's HARQ controller for processing a result of the decoding of at least one of the received control message and data and *for controlling the physical layer* according to a result of the processing."

Applicants further argue that the Examiner has not established proper motivation for the combination of SEIDEL et al. and DECKER. Specifically, it is not seen how one of ordinary skill in the art would have been motivated to combine SEIDEL et al. and DECKER by the data units of SEIDEL et al. needed to be decoded. Accordingly, should the Examiner maintain the rejection the Examiner is respectfully requested to articulate in detail how the data units of SEIDEL et al. needing to be decoded motivates the combination of SEIDEL et al. and DECKER teachings. Therefore, SEIDEL et al. and DECKER, neither alone nor in combination, neither explicitly nor implicitly, discloses, anticipates, suggests, teaches or renders obvious all of the features of the claims. Accordingly, claim 1 is allowable over SEIDEL et al. and DECKER and therefore Applicant's respectfully request withdrawal of the rejection. Moreover, dependent claims 2-17 are allowable for the reasons given above by virtue of their dependence on independent claims 1.

Regarding independent claim 18, the claim as amended recites:

A HARQ (Hybrid Automatic Repeat Request) controller
for retransmitting data in a mobile station of a mobile
communication system, the HARQ controller comprising:
at least one HARQ state machine for receiving state
information from a physical layer, for determining if a transition to
a next state should occur and for providing a result of the
determination to a state function section; and
a state function section for indicating an operation of the
physical layer according to the result of the determination by the
HARQ state machine.

The Examiner cited drawing figure 5 and column 7 lines 38-40 of SEIDEL et al. as disclosing a state function section for indicating an operation of the physical layer according to

the result of the determination by the HARQ state machine. The Examiner makes the argument that SEIDEL et al. teaches a transition to a different state. However, the Examiner's argument, regardless if it is correct or not, does not evidence that SEIDEL et al. teaches "<u>a state function section</u> for indicating <u>an operation of the physical layer</u> according to the result of the determination by the HARQ state machine." Further, upon review of SEIDEL et al., it is clear that SEIDEL et al. does not teach "<u>a state function section</u> for indicating <u>an operation of the physical layer</u> according to the result of the determination by the HARQ state machine." Should the Examiner maintain the rejection the Examiner is respectfully requested to articulate in detail how SEIDEL et al. is being interpreted to teach each and every portion of "<u>a state function section</u> for indicating <u>an operation of the physical layer</u> according to the result of the determination by the HARQ state machine."

The Examiner cited drawing FIG. 4 and column 4 lines 15-27 of DECKER as disclosing <u>least one HARQ state machine</u> for receiving state information <u>from a physical layer</u>, for determining if a transition to a next state should occur and for providing a result of the determination to a state function section. The Examiner argues that DECKER discloses a receiver that calculates decoded data received from a physical layer based on a state machine. Applicants respectfully disagree and do not find any teaching in DECKER that supports the interpretation of a receiver that calculates decoded data received from a physical layer <u>based on a state machine</u>. Should the Examiner maintain the rejection the Examiner is respectfully requested to articulate in detail how DECKER is being interpreted to teach each and every portion of "<u>a state function section</u> for indicating <u>an operation of the physical layer</u> according to the result of the determination by the HARQ state machine."

Applicants further argue that the Examiner has not established proper motivation for the combination of SEIDEL et al. and DECKER. Specifically, it is not seen how one of ordinary skill in the art would have been motivated to combine SEIDEL et al. and DECKER by the data units of SEIDEL et al. needed to be decoded. Accordingly, should the Examiner maintain the rejection the Examiner is respectfully requested to articulate in detail how the data units of SEIDEL et al. needing to be decoded motivates the combination of SEIDEL et al. and DECKER teachings. Therefore, SEIDEL et al. and DECKER, neither alone nor in combination, neither explicitly nor implicitly, discloses, anticipates, suggests, teaches or renders obvious all of the
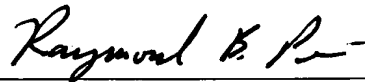
features of the claims. Accordingly, claim 18 is allowable over SEIDEL et al. and DECKER and therefore Applicant's respectfully request withdrawal of the rejection. Moreover, dependent claims 19-21 are allowable for the reasons given above by virtue of their dependence on independent claims 18.

VI. Conclusion

In view of the above, it is believed that the above-identified application is in condition for allowance, and notice to that effect is respectfully requested. Should the Examiner have any questions, the Examiner is encouraged to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

Date: November 22, 2006

Raymond B. Persino
Reg. No. 58,082
Attorney for Applicant

Roylance, Abrams, Berdo & Goodman, L.L.P.
1300 19th Street, N.W., Suite 600
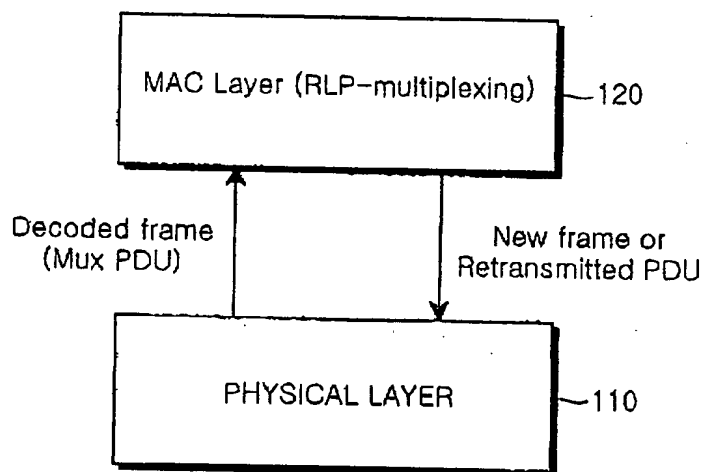Washington, D.C. 20036-2680
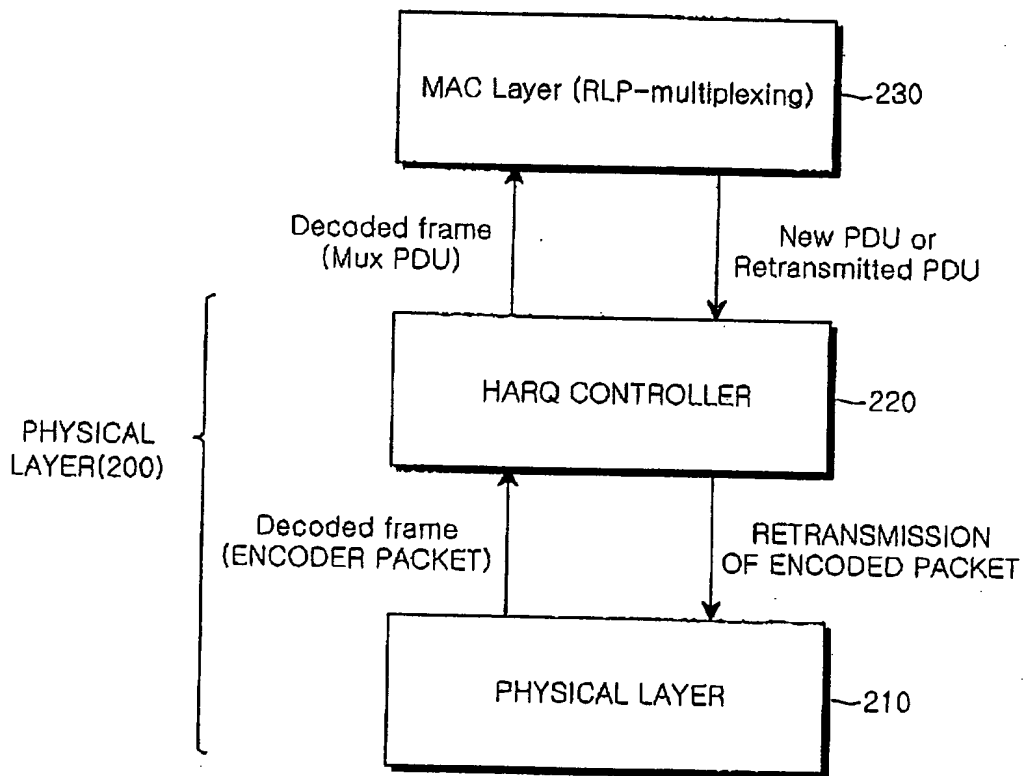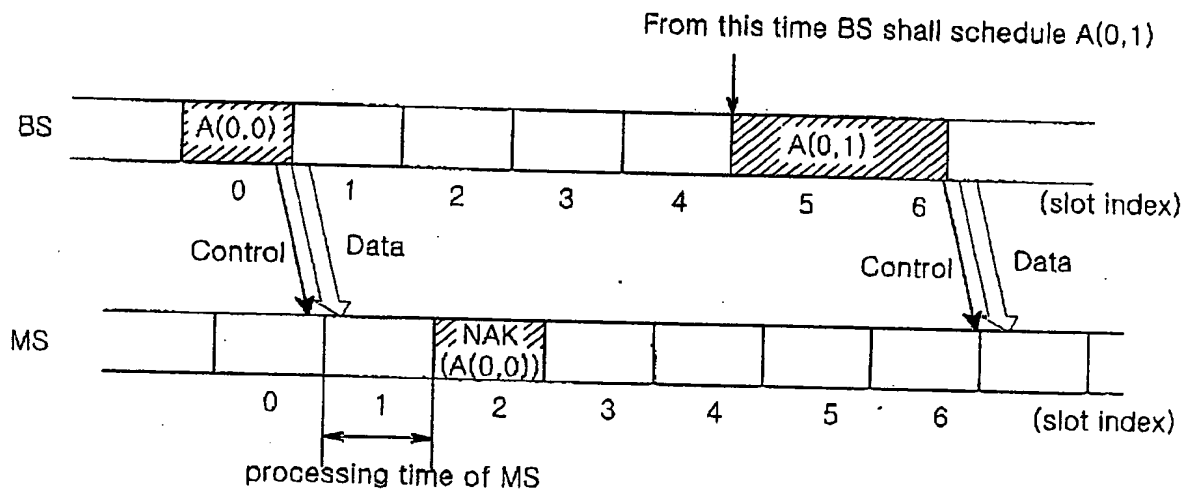Main: (202) 659-9076
Direct: (202)530-7394

MAC Layer (RLP-multiplexing) —120

Decoded frame
(Mux PDU)

New frame or
Retransmitted PDU

PHYSICAL LAYER —110

FIG.1

(CONVENTIONAL ART)

FIG.2

(RELATED ART)

From this time BS shall schedule A(0,1)

BS

A(0,0)   A(0,1)

0   1   2   3   4   5   6   (slot index)

Control   Data   Control   Data

MS

NAK
(A(0,0))

0   1   2   3   4   5   6   (slot index)

processing time of MS

A(x,y)=Mobile station 'A'
        ARQ instance(ACID)'x'
        Subpacket ID(SPID)'y'

FIG.3

(CONVENTIONAL ART)

FIG.4

(CONVENTIONAL ART)